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## 202.2.1 Consideration of Previous Spill Trajectories

The spill envelopes described in this document were developed by combining a series of trajectory analyses each of which use separate sets of conservative assumptions to predict all areas that could possibly be affected from a spill from a single location. To ensure that no potential receptor was omitted, the analyses included the assumptions that oil would be driven under regional extremes of climate, tide, current, and wind.

For comparison of the modeling assumptions, a study for an earlier contingency planning effort for Clean Bay (Clean Bay 1991) was reviewed. In the earlier study, spill envelopes were calculated for releases at three locations within San Francisco Bay (Anchorage 8 and 9, Richmond Long Wharf, Rodeo). Envelopes were calculated in the same basic way as in this study, i.e., by superposing the oil transport associated with spreading, tidal advection, and wind drift. The previous analysis used a much shorter time frame, however, as envelopes were calculated for a 3-hour, rather than 3-day, time period. Because the time scales and therefore the study assumptions differed, direct comparison of the envelopes is not possible. Nonetheless, a qualitative comparison, which is appropriate, was made of the two trajectory analyses. The two studies were found to be in qualitative agreement.

In order to evaluate the more likely movement of a spill, the results of another spill trajectory modeling effort were also reviewed and compared to the comparable spill envelope developed for this FRRM project. The example chosen for comparison is included in a study prepared by the National Oceanic and Atmospheric Administration (NOAA) in which a "worst case" spill of crude oil at Harding Rock was modeled (San Francisco Bay/Delta ACP, 1993). Several assumptions were made as part of the NOAA study which were different from the assumptions required to develop the spill envelopes for the FRRM site. Some of the major different assumptions included:

- NOAA used a smaller spill size (12,000 bbl vs. 300,00 bbl for the FRRM)
- NOAA considered typical wind patterns compared to extreme winds
- NOAA used common tidal conditions rather than extreme tidal conditions

Based on these assumptions, the NOAA results are more representative of a single spill under typical conditions for this area. The NOAA results for the spill occurring at Harding Rock indicate that only a relatively small area would be affected compared to the results based on the assumptions required for the FRRM.